[0359] **Description.** The Description is an optional column that describes the map

dataset.

[0360] **Map Dataset ID.** Each map dataset has a unique numeric identifier, the

Map Dataset ID.

5   [0361] **Map Dataset Type.** TSAF uses several different types of map datasets. The

simplest type of map dataset is simply an Application Table that already

includes a spatial column. The Map Dataset Type specifies the type of dataset

defined by a row in the Map Dataset table.

[0362] **Name.** Each map dataset has a unique Name that can be used to identify the

10   dataset.

[0363] **Query.** Some map datasets rely on a query to generate from other

Application Tables the data for the map dataset. If necessary, the Query

column specifies this query.

[0364]   Each map dataset consists of (a) information that describes the spatial

15   data that should be rendered for the map and (b) other data columns that are part of

the map data. The Map Dataset Attributes table 1735 lists the Attributes that are part

of the map data that defines a map.

[0365] **Attribute ID.** Each row in this table lists an Attribute, indicated by the

Attribute ID, that is part of a map dataset.

20   [0366] **Field Name.** Some map datasets may choose to use a different name for the

column containing an Attribute than the standard column name. For example,

a map dataset that includes data from more than one Application Table may

91

include columns with the same name from different tables. However, the field names in the resulting map dataset must be unique. This column specifies the field name for an Attribute that is included in a map dataset.

[0367] Map Dataset ID. Each row in this table lists an Attribute that is part of the map dataset indicated by the Map Dataset ID.

5

The Data Maintenance Data Dictionary

[0368] The data maintenance portion of the Data Dictionary describes the meta-data necessary to support the identification of data sources for the Entities and Attributes. For example, project data may be derived by periodically importing information from a project database. The Data Maintenance Data Dictionary contains information to identify (a) the source database that is used to populate data and (b) the relationship between the external data and Attributes. Figure 18 depicts the table structure of the tables required to support this functionality.

15 **[0369]** The following sections describe each of these tables:

[0370] Data Source ([Data_Sources]) (1800). Updating data from an external data source consists of the following steps: (1) establish a connection to the data source, (2) query the data source to create an update recordset, and (3) use the data in the update recordset to update the data. The Data Source, which

20 includes the following columns, contains the information necessary to establish a connection to the data source and to query that source.

[0371]   **Connection String.** The connection string contains the information

necessary to connect to a data source.

[0372]   **Data Source ID.** Each data source is identified by a unique numeric

identifier, the Data Source ID.

5   [0373]   **Data Source Type.** TSAF must use different methods to connect to a data

source, depending on the type of source. For example, different techniques are

required to open a shape file than are required to open an Oracle table.

[0374]   **Description.** Each data source has a description that provides a detailed

description of the data source.

10   [0375]   **Import Type.** Several different types of import are supported. The Import

Type column specifies the type of import for this data source.

[0376]   **Name.** Each data source has a name, which is used to help usersselect a

data source for importing.

[0377]   **Query.** The query column is an SQL statement that generates the import

15   recordset from the data source.

[0378]   **Data Columns (1810).** Updating data from an external data source consists

of the following steps: (1) establish a connection to the data source, (2) query

the data source to create an update recordset, and (3) use the data in the update

recordset to update the data. The Data Columns table identifies the

20   relationship between the external data columns and the internal Attributes so

that those Attributes can be updated.